



# DEFENSE CENTERS OF EXCELLENCE

For Psychological Health & Traumatic Brain Injury



## Defense Centers of Excellence

for Psychological Health and Traumatic Brain Injury

★ Annual Report 2009 ★



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## WELCOME LETTER



Dear Friends of DCoE:

**I am pleased to have the opportunity** to share with you the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) Annual Report. During the past two years, DCoE has grown from an idea into a “center of centers” serving as the Department of Defense’s open front door for all concerns relating to psychological health and traumatic brain injury.

Promoting warrior resilience, recovery and reintegration has required the direct engagement of senior stakeholders at all levels to provide public health leadership characterized by transparency, knowledge, candor, respect and strength. Our biggest challenge is overcoming the deadly barrier of stigma to embrace a transformed culture where seeking help for psychological health and traumatic brain injuries is seen as an act of courage and strength and NOT as a weakness. Treatment works — early intervention counts.

Our warriors are coming home with multiple medical conditions requiring an interdisciplinary holistic approach that encompasses injuries affecting the mind, body and spirit. The injured warrior may have sustained one or more concussive injuries, either through successive blasts or a blast followed by direct blows. This may be compounded by psychological trauma, grief and loss, as well as trauma related conditions including depression, pain, anxiety, substance misuse and conflicted relationships. No one can go it alone — we’re all in this together.

To this end, in collaboration with our growing network of global partners, we are working toward providing the best possible resources to our service members and their loved ones who are coping with psychological health and traumatic brain injury concerns — now and in the future.

Thank you for joining our journey and committing to make our best even better tomorrow and beyond for those who support and defend our nation’s freedom.

To the journey,

A handwritten signature in black ink, appearing to read "L. Sutton".

Loree K. Sutton, M.D.  
Brigadier General, MC, USA  
Director

DEDICATION

**We dedicate this report,** as we do all of the efforts of DCoE and its component centers, to the service members, veterans and families who defend and support our nation's freedom. For many of our warriors, coming home does not mean that the battle is finished. The battle often continues — in hearts and minds, relationships and communities — after deployment. Our work in the last two years and our goals for the future are aimed at supporting our warriors and their families throughout the entire deployment cycle and beyond. We thank each one of you for your courageous sacrifices, and we pledge to forge ahead on our journey to provide you with the best possible care and resources. There simply is no greater privilege.

This is DCoE's first annual report, covering the period from its inception in November 2007 to November 2009. Hereafter, an annual report will be produced at the end of each fiscal year.

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## ★ About DCoE ★



### OVERVIEW

DCoE opened its doors in November 2007, and has since led a groundbreaking collaborative effort with the Department of Veterans Affairs (VA), civilian agencies, community leaders, advocacy groups, clinical experts and academic institutions to promote the resilience, recovery and reintegration of service members, veterans and military families facing concerns related to psychological health (PH) and traumatic brain injury (TBI). DCoE is part of the Department of Defense's (DoD) Military Health System (MHS), which provides a “continuum of care” — from initial accession to deployment to discharge — for all service members.

DCoE is firmly committed to ensuring that every service member, veteran and family member receives excellent care and support across the spectrum of resilience, prevention, diagnosis, treatment, recovery and reintegration. As a “center of centers,” DCoE brings together a global network of military and civilian expertise to establish best practices and quality standards for the treatment of PH concerns and TBI within DoD.

#### History

In 2007, due to the unprecedented pace of deployments to combat environments in Iraq and Afghanistan, six congressionally mandated task force reports highlighted the immediate need to provide enhanced health resources for America's service members, including care for psychological injury and TBI. In an effort to enhance outreach and coordination among DoD, VA, other federal agencies and civilian partners, Congress mandated the creation of a center of excellence to address PH and TBI issues specifically aligned to five guiding principles:

- Furnish strong, visible leadership and the necessary resources
- Create, disseminate and continuously update excellent standards of care
- Conduct pilot or demonstration projects to better inform quality standards if best practices are unavailable
- Monitor and revise access, quality and program implementation to ensure highest standards and consistent quality
- Construct a system in which each individual receives the same high level of service regardless of military branch, component, status or geographic location

DCoE was established to meet this congressional intent and to become the open front door within DoD for all PH and TBI needs. DCoE has embraced its mission to assess, validate, oversee and facilitate prevention, resilience, identification, treatment, outreach, rehabilitation and reintegration programs for PH and TBI to ensure DoD meets the needs of service members, veterans, military families and communities.

#### Organizational Structure

Under the leadership of Brig. Gen. Loree K. Sutton (special assistant to the Assistant Secretary of Defense for Health Affairs) and Deputy Director Sonja V. Batten, Ph.D. (associate chief consultant for VA/DoD Collaboration in VA's Office of Mental Health Services), DCoE is composed of the following six component centers, which provide care, support training and advance science through complementary missions, goals and objectives:



**Center for Deployment Psychology (CDP)**  
Promotes the training of military and mental health professionals



**Center for the Study of Traumatic Stress (CSTS)**  
Provides knowledge, leadership and applications for recovering from disaster and trauma



**Defense and Veterans Brain Injury Center**  
Develops and delivers advanced TBI-specific treatment and surveillance





**Deployment Health Clinical Center (DHCC)**  
Improves deployment-related health through assistance, treatment, advocacy and education

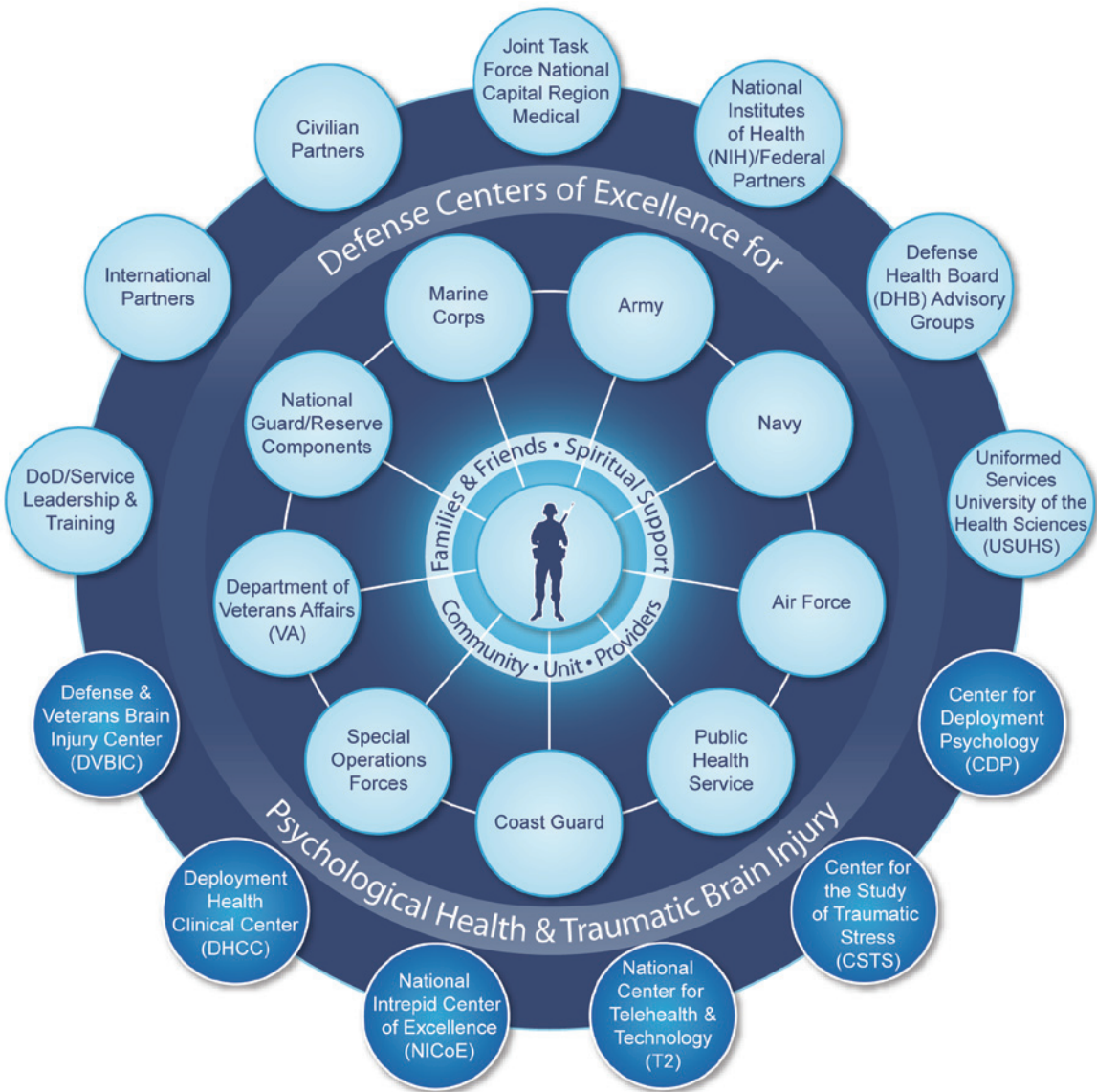


**National Center for Telehealth and Technology (T2)**  
Leverages technology to increase access and advance care for warriors and their families in all locations

**National Intrepid Center of Excellence (NICoE)**  
Dedicated to advanced research, diagnosis and treatment planning for PH and TBI

DCoE integrates its core functions across eight directorates to coordinate capabilities and ensure quality of care. These directorates include:

- Clearinghouse, Outreach and Advocacy
- Communications
- PH Clinical Standards of Care
- Research and Program Evaluation
- Resilience and Prevention
- Strategy, Plans and Programs
- TBI Clinical Standards of Care
- Training and Education



# ★Key DCoE Accomplishments★





In its first two years, DCoE launched a historic journey to lead the services and nation in support of warriors, veterans and their loved ones affected by PH and TBI conditions. Success ultimately depends upon transforming military culture to embrace a public health model of peer-to-peer support, integrative care, translational research and community-based partnerships to maximize resilience, recovery and reintegration.

**Established a “Center of Centers”**

When DCoE opened its doors in November 2007, the first initiative was very clear: bring together four existing centers with proven expertise on PH- and TBI-related issues to coordinate and facilitate their efforts within a collaborative framework. As an integrated group, DCoE strives to increase the overall effectiveness of treatment, research and education in PH and TBI to meet the needs of all warriors and their families.

The existing centers included the Center for Deployment Psychology (CDP), Center for the Study of Traumatic Stress (CSTS), Defense and Veterans Brain Injury Center (DVBIC) and Deployment Health Clinical Center (DHCC). Together these centers began to work together to maximize opportunities for warriors and families to thrive through a collaborative global network promoting resilience, recovery and reintegration for PH and TBI.

**Created Additional Centers**

To complement the collective capabilities of CDP, CSTS, DVBIC and DHCC, DCoE created and incorporated two additional centers into its network: the National Center for Telehealth and Technology (T2) and National Intrepid Center of Excellence (NICoE). T2 is the backbone of technology advancement at DCoE as it develops, researches, evaluates, standardizes and deploys new and existing technologies to improve the lives of our nation’s service members, veterans and families. NICoE will serve as DCoE’s hub of its network of networks to provide global

consultation, advanced diagnosis, treatment planning, family-centered education, clinical translational research and long-term follow-up for military personnel with complex PH and TBI conditions. Funded through the generosity of the Intrepid Fallen Heroes Fund, NICoE will open in 2010.

**Set the PH and TBI Standards for Warrior Care**

One of DCoE’s central functions is to standardize the quality of care available to warriors experiencing PH and TBI symptoms. To ensure that this important service is carried out, DCoE actively collaborates to establish clinical practice guidelines (CPGs), which are recommendations that improve the consistency of available treatments based on evidence from systematic review and synthesis.

CPGs offer clear treatment and referral recommendations to providers for the diagnosis and treatment of PH and TBI problems. DCoE has collaborated with DoD and VA to produce new evidence-based CPGs and refine existing ones. This is accomplished by participating in working groups on mild TBI (mTBI), major depressive disorder, PTSD, substance use disorders, chronic opioid therapy and post-deployment health evaluation and management. These working groups are brought together regularly in varied locations across the nation and produce valuable insights that drive consistency across locations, prevent redundancies and share valuable information with providers and clinicians. In conjunction with these CPG workgroups, DCoE conducts workgroups to produce clinical support tools. These tools serve to drive adoption of CPGs by providers of PH and TBI care.



**Led Development of Global Standards of Care for TBI**

Clinicians currently treat an increasingly large population of wounded warriors who have sustained mTBIs. In April 2009, DCoE teamed with component center DVBIC to host a two-day consensus conference aimed at developing a guidance document for the services that addressed the issues of assessment, intervention, programs and outcomes as they relate to cognitive rehabilitation. The conference produced cognitive rehabilitation clinical guidance that will be implemented in 14 sites for initial trial and evaluation, after which time they may be used throughout DoD.

DCoE actively leads two working groups on TBI. First, the Quad Service Workgroup consists of representatives from each of the services (Army, Navy, Air Force and Marine Corps) and is led by DCoE. This group identifies unmet needs and challenges either within their respective services or DoD as a whole in

regard to everything TBI. The group generates ideas and shares experiences and expertise. Additionally, DCoE leads a TBI dissemination strategy workgroup that includes representatives from the services and VA to ensure that efforts related to TBI product development and dissemination are not duplicated. This group also serves as a mechanism through which information can be shared and disseminated to their respective audiences.

**Conducted Site Visits at MHS Facilities**

DCoE actively participates in site visits that allow collaborative relationships with PH and TBI programs across the MHS. These visits serve as a vital link in bringing key research findings for PH and TBI into clinical practice. Site visits provide a network of expertise between DoD and VA, as well as public and private sector mental health clinicians and TBI clinicians. Working together results in standardized care, coordination of best practices and increased access to CPGs.

**DCOE Milestones  
Advancing the  
Continuum of Care**

2007

**November 2007**  
DCoE headquarters opens

2008

**January 2008**  
DoD Suicide Event Report (DoDSER) is deployed to standardize suicide data (p. 17)

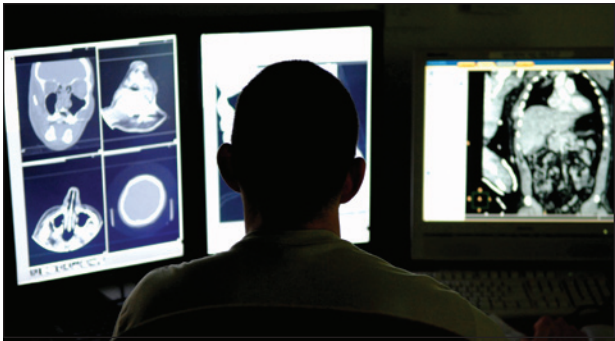
**February 2008**  
First Strategic Planning Summit defines DCoE directorates

**March 2008**  
First monthly global video teleconference (VTC) held (p. 18)

**April 2008**  
“Talk, Listen, Connect” Phase II program is released with Sesame Workshop (p. 15-16)

**May 2008**  
DVBIC releases Clinical Practice Guidance for mild TBI in non-deployed settings





Over the past year, DCoE participated in 11 site visits focused on TBI, in which subject matter experts facilitated and evaluated the implementation of innovative practices, worked with new standards of care, participated in provider training and improved clinical and administrative processes. After each visit, DCoE provided consultation to the site and monitored their progress in making improvements. DCoE will continue its program to help service members to receive the best possible care for TBI.

Additionally, DCoE participated in 20 PH-related site visits in the past year that supported standardized PH care provision and the exchange of ideas across the military treatment continuum. DCoE, along with DHCC, made site assistance visits to Army posts that had implemented RESPECT-Mil, a program that integrates primary care and behavioral health care services through additional training in mental health issues for primary care providers.

**Provided Information through the DCoE Outreach Center**

DCoE is dedicated to ensuring that when service members need help, they get it immediately, day or night, and in the most effective way possible. With that in mind, DCoE launched a 24/7 Outreach Center to connect service members, veterans, families, health care providers, military leaders and employers with pertinent resources and services when they need them the most. The DCoE Outreach Center provides confidential guidance and information through a toll-free phone number, e-mail, fax and online chat.

The DCoE Outreach Center provides valuable tools, tips and resources on all PH and TBI issues, including but not limited to resilience programs, suicide prevention initiatives, family and relationship support, alcohol and substance abuse programs and tips to navigating the MHS. It is staffed by experts in the field, with advanced degrees in nursing and PH. When necessary, consultants refer callers to the appropriate center within DoD, other federal agencies or community organizations.

The DCoE Outreach Center can be reached by phone toll-free at 866-966-1020, by e-mail at [resources@dcoeoutreach.org](mailto:resources@dcoeoutreach.org) or via the online Live Chat at [www.dcoe.health.mil/24-7help.aspx](http://www.dcoe.health.mil/24-7help.aspx).

**Targeted Stigma with “Real Warriors” Campaign**

In May 2009, DCoE launched Real Warriors, an innovative multimedia public education campaign aimed at dispelling the stigma that is associated with seeking treatment for PH and TBI issues in the military. DCoE enacted the campaign to eradicate the belief that seeking care will harm warriors’ careers, cost them the respect of their unit or make them appear weak, and to promote cultural transformation, in which asking for help is a sign of strength.

Dynamic communications on several fronts have directly engaged military personnel, families and health care providers. Specifically, DCoE’s investment has produced:

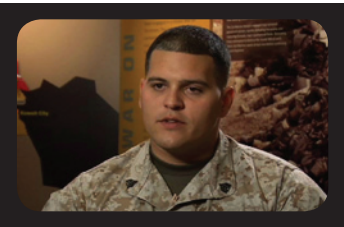
- The Real Warriors Web site, [www.realwarriors.net](http://www.realwarriors.net), which has delivered the campaign’s anti-stigma message to more than 100,000 visitors. The Web site features empowering and informative articles as well as interactive message boards and an online chat (which connects users with the DCoE Outreach Center).



“Despite our best efforts, there is still a stigma associated with seeking help for psychological injuries. To that end...the department has also launched the Real Warriors Campaign, a national multimedia public education effort designed to combat this stigma.”

— Secretary of Defense Dr. Robert M. Gates, October 2009

- Video profiles of warriors who have received care and are maintaining successful military careers sharing their experiences and encouraging others to reach out for help. Public service announcements based on select video profiles have reached more than 1 million service members in 177 countries and have appeared on 141 domestic civilian stations.
- 250,000 posters and flyers on military installations worldwide.
- An innovative social media strategy, including regularly updated pages on Facebook and Twitter, video channels on YouTube and TroopTube and Web bookmarking on Delicious and Digg.



campaign hosted feedback sessions to communicate directly with military personnel about stigma, which informed the campaign’s developing content and provided DCoE with valuable insights.

Because of its progressive message, the campaign has received significant coverage in national, military and local media. Appearances on CNN and “The Today Show” attest to the quality of media coverage, but the quantity of media coverage has also been significant. In fact, the campaign has reached hundreds of thousands of individuals through broadcast, print and online media coverage, nearly 100 percent of which has been positive in tone.

**Provided Resources for Military Families through Sesame Workshop**

Children of warriors face difficult situations, as they must endure the stress of a parent’s deployment. To help young children (ages two to five) cope with the deployment cycle and challenges of a parent in danger, DCoE partnered with Sesame Workshop, the nonprofit educational organization behind “Sesame Street,” to develop and distribute a series of outreach programs. The Sesame Workshop series uses recognizable characters to explain the situations that military families face in a way that young children can easily understand. Topics have focused on issues related to multiple deployments and family changes that occur when a parent is injured physically or psychologically. Children are able to connect and better understand the situation through familiar characters, while

**REAL WARRIORS★REAL BATTLES**  
**REAL STRENGTH**

Real Warriors has partnered with more than 44 organizations, including federal and national organizations such as VA and the Bob Woodruff Foundation. A multifaceted outreach strategy has driven continued momentum in two key ways. First, active participation in more than 30 events addressing military PH and TBI has helped build a network of advocacy. Second, the

**May 2008**  
CSTS publishes the first studies on human PTSD brain tissue (p.22)

**June 2008**  
NICoE groundbreaking ceremony in Bethesda, Md. (p. 25)

**June 2008**  
First “DCoE in Action” newsletter published (p. 38)

**June 2008**  
T2 begins study evaluating Virtual Reality Exposure Therapy versus Prolonged Exposure Therapy (p. 25)

**July 2008**  
Educational DCoE Web site launches at [www.dcoe.health.mil](http://www.dcoe.health.mil)

**August 2008**  
Resilience Continuum Model launches (p. 17)

**August 2008**  
T2 launches *afterdeployment.org* to provide resources to warriors, veterans and families (p. 25)

**August 2008**  
CDP expands enrollment of “Topics in Deployment Psychology” training (p. 21)



parents are provided with helpful tools to foster communication. This partnership produced two video programs, “When Parents Are Deployed” and “Coming Home: Military Families Cope with Change,” as well as an interactive Web site, “Family Connections.”

The first program, “When Parents Are Deployed,” described the three stages of transition families go through when experiencing pre-deployment, deployment and homecoming. The second program, “Coming Home: Military Families Cope with Change,” shared inspirational stories of military families coping with physical, emotional and psychological injuries. More than 400,000 DVDs of the bilingual program (English and Spanish) have been distributed to date. In addition, the programs are available for free download on iTunes to increase the number of families reached. The video programs won a prestigious CINE Golden Eagle Award in 2009.

The “Family Connections” Web site ([www.SesameStreetFamilyConnections.org](http://www.SesameStreetFamilyConnections.org)) serves as an ongoing initiative to help children cope with deployments, multiple deployments and injured parents, and allows families and friends to stay in touch through messages, artwork, photos and video clips. In addition, “Family Connections” offers communication tips for parents and videos for children that feature favorite “Sesame Street” characters asking questions

and discussing their feelings. In September 2009, “Family Connections” won the Interactive Media Award for Best in Class in children’s Web sites.

Going forward, DCoE continues to work with Sesame Workshop and is producing a third video program, which will deal with the most daunting topic yet: the death of a parent. Similar to the first two programs, the third will feature “Sesame Street” characters helping children cope with such a devastating loss and will also include stories from brave military families across the nation. DCoE is committed to helping our warriors’ families through the best of times and the most difficult times.

**Contributed to Suicide Prevention Efforts**

The loss of any service member to suicide is tragic. DCoE is committed to reducing the number of suicides as quickly as possible by ensuring that every service member receives the highest quality care and resources across the spectrum through resilience, prevention, diagnosis, treatment, recovery and reintegration. To reduce the number of military suicides, it is essential to develop short- and long-term plans for addressing the effects of deployment and combat exposure on the brave men and women of the armed services.

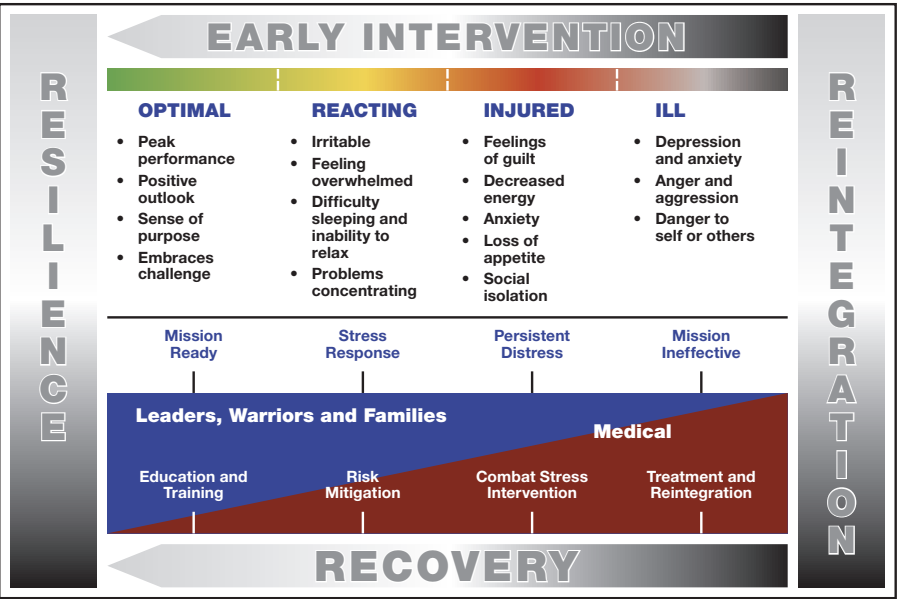
DCoE chairs the Suicide Prevention and Risk Reduction Committee (SPARRC), which was formed to examine military suicide, standardize reporting, collaborate with other experts in the field and advise on future prevention initiatives. An excellent example of federal and non-federal collaboration, SPARRC includes representatives from military service suicide prevention programs, National Guard Bureau, Reserve Affairs, Office of Armed Forces Medical Examiner, T2, VA and Substance Abuse and Mental Health Services Administration (SAMHSA, an entity of NIH). SPARRC is a leading voice in the area of suicide prevention, presenting at multiple conferences across the nation and participating in working groups on the topic. DCoE also collaborates on workgroups to standardize the methods for assessing and discussing suicide throughout DoD and VA, focusing on assessment tools and nomenclature.

DCoE, T2, SPARRC and the services collaborated to lead the creation of the DoD Suicide Event Report (DoDSER), which standardized the collection of suicide event details, victims’ personal historical information and data about other potential risk factors. Each military suicide report is now filed in the DoD Suicide Database, which was established in January 2008. This new database records up to 250 data points per suicide, offering the military services access to standardized data for the first time. Standardized information and reporting will allow the military services to track and analyze suicide data proactively to improve prevention, intervention and treatment services. No other organization or mechanism has existed to develop, formally require and monitor compliance across DoD for standardized suicide data via diligently developed systems. Additionally, DCoE provides a quarterly and annual report to the Secretary of Defense on the rate of suicides and prevention initiatives.

In January 2009, DCoE joined with VA to co-sponsor the first-ever joint annual conference on suicide prevention, “Building Community Connections: Suicide Prevention for the 21st Century,” to enhance awareness of best practices and treatment methods for suicide prevention. The conference brought together leading experts in government, medicine and the private sector for the common goal of decreasing suicide rates. Four areas were targeted: clinical intervention, multi-disciplinary approaches, practical applications and tools and research and academics.

**Promoted Resilience Efforts**

One of DCoE’s main objectives is to create a culture and system of resilience. A military culture based on resilience increases force readiness by strengthening individuals and



units, by assessing and treating physical and psychological concerns early and by providing support networks for successful reintegration. As part of these efforts, DCoE participated in site visits to resilience programs in many areas across DoD. These visits built collaboration as well as aided in the development of program evaluation criteria.

To enhance resilience, maximize recovery and promote reintegration, DCoE promotes a holistic approach that integrates physical, psychological, social and spiritual strength. DCoE adapted the Marine Corps Resilience Continuum Model (above) as a framework that wholly represents the journey of a wounded warrior from a state of illness to a state of optimal performance. This model establishes a collaborative partnership between line and medical leaders to ensure the use of relevant and timely tools, while also increasing the operational readiness across peer, family, organizational and community systems.

DCoE’s Chaplain Resilience Program Workgroup facilitates communication and cooperation between DCoE and chaplains. The group has improved connectivity between chaplains in different military services and has heightened awareness of Chaplain Resilience Programs. This group is a critically important

**September 2008**  
DVBIC holds Second Annual TBI Military Training Conference

**October 2008**  
T2 conducts first clinical training workshop for DoD/VA providers on Virtual Reality Exposure Therapy for PTSD

**October 2008**  
DCoE co-hosts first annual conference on trauma spectrum disorders (p. 29)

**October 2008**  
Report titled “Section 1624, Establishment of DCoE” is submitted to Congress

**November 2008**  
DCoE hosts first annual Warrior Resilience Conference (p. 17)

**November 2008**  
CSTS presents first PTSD biomarker studies

**November 2008**  
DCoE one-year anniversary

**November 2008**  
DHCC delivers 40th cycle of Specialized Care Program Track II (p. 24)



piece of the holistic approach to resilience and works to better provide spiritual support to warriors and their families.

DCoE also participates in the Yellow Ribbon Reintegration Program task force and workgroup to help identify and develop a range of resilience programs that National Guard members and reservists can use to increase resilience.

Leading the way in the promotion of resilience, DCoE sponsored the first two annual Warrior Resilience Conferences in November 2008 and November 2009. The first conference brought together military leaders, medical experts and community leaders to educate and promote a cultural change toward resilience. The second conference focused on educating line leaders about existing and emerging tools for increasing resilience across the mind, body and spirit that strengthen the individual and the unit to thrive in any situation, both in-theater and at home.

Developed Innovative PH and TBI Educational Programs

DCoE strives to find multiple ways to provide educational services to military and civilian clinicians. In November 2008, DCoE collaborated with the Uniformed Services Social Workers to present an interdisciplinary clinical education seminar at the 114th Annual Association of Military Surgeons of the U.S. Pre-Meeting. Titled “PH and TBI: Interdisciplinary Practices,” the training program specifically targeted continuing medical education units and disseminated best practices for PH and TBI care.

DCoE also developed curriculum guidelines for the Defense Medical Readiness Training Institute, a DoD program that hosts various provider trainings, one of which is the Combat Casualty Care Course. DCoE researched and created a sample curriculum on provider resiliency to be inserted into the course, and the pilot course is underway.

Beginning in early 2009, DCoE began working with the National Defense University to develop a curriculum on PH for military leaders. In addition to a targeted core curriculum, DCoE provided

support to the National Defense University on its Distinguished Lecturers Series.

Connected and Educated Leading Experts

Every month, DCoE holds a global educational opportunity through video teleconference (VTC) or webinar, focused on a topic relevant to the military community. This outreach initiative provides a forum for discussion of critical issues relevant to the PH and TBI concerns of service members, veterans and their families. These opportunities also ensure global access to authoritative and credible subjects and resources. Since their inception in March 2008, the monthly conferences have expanded internationally, reaching service members in-theater in Iraq, as well as experts in the United Kingdom, Germany and Canada. DCoE has held numerous conferences to date on topics including:

- Forensic and Ethical Issues Related to PH and TBI
- The TBI Continuum of Care
- Primary Care PH and TBI Initiatives
- Substance Misuse Vulnerabilities within the Wounded Warrior Population
- Concussion/mTBI In-Theater: Clinical Practice Guidelines in a Deployed Setting
- Continuing the Dialogue Between DCoE and Leaders in Military Medicine
- The Resilience Continuum
- DCoE Research
- The Real Warriors Campaign
- Sustaining Families
- Collecting Data and Conducting Research In-Theater
- Dual Diagnosis: PH and TBI Clinical Challenges
- Reintegration Experiences: The View from the States
- Rural Health Care Issues and Technology Solutions
- Suicide Prevention

DCoE also actively participates on the Federal Partners Senior Workgroup for Mental Health. Members are high-level representatives from agencies across the federal government that serve children, adults and older adults with psychological disorders. As part of these efforts, the DCoE Director co-chairs

the Federal Partners Priority Work Group on the Reintegration Needs of Returning Service Members and their Families with the VA Deputy Chief Consultant for the Office of Mental Health Services. A model for collaboration at all levels of government, the group was organized across the federal government in 2008 and meets monthly to coordinate on each agency's internal efforts to address the reintegration concerns of service members, veterans and their families. The group focuses on strategic collaboration, family resources, tracking across the lifespan, anti-stigma campaigns and support of service members’ transitions into civilian careers.

Provided Support to the Fort Hood Community

In November 2009, DCoE personnel — from headquarters and from each component center — provided support to the Fort Hood community in response to the tragic shootings on base.

Staff from DCoE headquarters and component centers NICOE, CDP and DHCC provided psychological first aid interventions to military personnel and their families. Multiple group and individual briefings and counseling sessions were provided to the 36th Engineer Brigade and the 20th Engineer Battalion. Over 200 20th Engineer Battalion soldiers and family members received psychological first aid sessions and behavioral health assessments. Using strategies outlined in Army’s Battlemind training, the DCoE team conducted a Unit Behavioral Health Needs Assessment for the 20th Engineer Battalion. (This survey gives a snapshot of the unit’s status along a variety of domains, such as behavioral health, morale, cohesion and confidence in leaders.) Over 300 soldiers completed the Unit Behavioral Health Needs Assessment anonymously. The results and recommendations from the evaluation were provided in out-briefs to the 36th Engineer Brigade and the 20th Engineer Battalion Command Team and in written form to the III Corps Commander and Army Vice Chief of Staff.

In addition, the DCoE team provided psychological first aid support to assist soldiers who were coping with the tragic event and preparing for upcoming deployments. DCoE staff collaborated with leaders from the Central Regional Medical Command and the 1908th and 467th Medical Detachments (Combat Stress Control), which also lost several soldiers in the attack. During this crucial time, DCoE personnel were able to use their expert knowledge of the most up-to-date best practices to support service members and their families coping with this significant event, and to provide commanders and leaders with an evaluation of unit readiness in preparation for deployment.

Component center DVBIC also provided support by assisting with the reconstitution of the mTBI clinic that was closed due to its immediate proximity to the scene of the tragedy. To aid in getting the clinic back up and running, DVBIC personnel met with several service members and performed neuropsychological testing to alleviate the backlog of patients caused by the disruption and relocation.

Component centers T2 and CSTS provided on-the-ground consultation to Fort Hood leadership following the shooting. T2 staff met with the assessment planning team to discuss innovative technology applications and the Automated Behavioral Health Clinic, as well as the development of a mobile device that could deliver assessment measures in support of clinical surveillance. Within 48 hours of the event, CSTS sent three staff members to Fort Hood in response to a by-name request to consult on developing the behavioral health response plan, as well as working with affected children and families. CSTS staff subsequently served on the Fort Hood/III Corps Expert Review Panel, consulting on the III Corps behavioral health campaign plan and provided eight fact sheets created specifically in response to this incident.

2009

December 2008

DHCC finishes rolling out its RESPECT-mil clinical program to 15 Army Medical sites (p. 24)

December 2008

DHCC initiates NIH/DoD-funded randomized clinical trial of DESTRESS-PC, a Web-based self-management PTSD treatment program (p. 24)

January 2009

DCoE co-hosts Suicide Prevention Conference with VA (p. 17)

January 2009

Outreach Center launches to provide 24/7 support to warriors and families (p. 14)

March 2009

Sutton testifies before the Senate Armed Service Committee Subcommittee on Personnel

March 2009

DCoE assembles experts from 50 agencies to standardize PH/TBI definitions, tools and procedures (p. 29)

April 2009

DCoE holds open house on Capitol Hill



## ★ Component Centers ★



As a “center of centers,” DCoE oversees six component organizations that each contribute unique insights, standards, clinical tools and research products to the field of PH and TBI in the armed services. In its role as an umbrella organization, DCoE guides these centers in the mission of executing the highest quality research, training and clinical services to support the brave men and women who defend our nation.



### **Center for Deployment Psychology (CDP)**

CDP was established by Congress in 2006 and given the mission to train military and civilian behavioral health professionals to provide the high quality, deployment-related PH and TBI services that our service members and their families deserve. CDP increases the awareness of deployment-related issues through the use of live, online and virtual education methods and promotes the use of empirically supported interventions through training and supervision.

#### **Selected Achievements:**

- **Conducted Advanced Training Institute.** A CDP charter program, the Advanced Training Institute develops and disseminates in-depth deployment-related behavioral health training for military and civilian providers. More than 400 providers have attended CDP’s two-week “Topics in Deployment Psychology” course at Uniformed Services University of the Health Sciences (USU) in Bethesda, Md. This course features CDP staff and subject matter experts from across the military services and the civilian sector. CDP also delivered a one-week course called “Addressing the PH Needs of Service Members and Their Families,” which provided an introduction to military culture and was attended by a total of more than 750 civilian providers in eight cities across the country.

- **Participated in Training at Military Treatment Facilities.**

At each of the 10 Military Treatment Facilities with a clinical psychology internship program, a CDP deployment behavioral health psychologist provides ongoing training, education and supervision to psychology interns and other hospital staff, as well as direct clinical services to beneficiaries. In the last two years, these CDP professionals provided more than 28,000 hours of clinical work and training support. Training highlights include developing PTSD specialty clinics in several locations, training law enforcement hostage negotiation teams on issues specific to service members, developing therapy programs for military couples experiencing PTSD and providing expertise in the development of wounded warrior programs.

- **Provided Mobile Training Teams.** Through its Mobile Training Teams, CDP trained behavioral health providers to deliver evidence-based treatments for deployment-related PH and TBI conditions. Specifically, CDP provided presentations and workshops to local and national agencies, including VA Medical Centers and Vet Centers, Military Treatment Facilities and civilian agencies. To date, CDP’s Mobile Training Teams have trained more than 1,000 military and civilian providers in empirically supported treatments for PTSD, and more than 3,000 individuals have received presentations on military culture and deployment-related PH and TBI issues.

- **Developed Online Training and Education Services.**

Through its Web site, [www.deploymentpsych.org](http://www.deploymentpsych.org), CDP expanded its core training programs by initiating Web-based education tools for military and civilian providers, such as the online training available on Military Cultural Competence. CDP also conducted online community outreach and library services and will significantly expand its Web-based services in the coming year to include downloadable podcasts of trainings, live streaming webinars, a provider-focused blog and other innovative features.

#### **April 2009**

Clinical Practice Guidelines for mild TBI in deployed settings released

#### **May 2009**

Real Warriors Campaign launches to address stigma surrounding PH and TBI in military culture (p. 15)

#### **July 2009**

CSTS announces it will help conduct the largest-ever study of military suicide and PH (p. 22)

#### **July 2009**

Sesame Workshop interactive “Family Connections” Web site launches (p. 16)





**Center for the Study of Traumatic Stress (CSTS)**

Founded in 1987, CSTS is one of the nation’s oldest and most highly regarded academic-based organizations dedicated to advancing

trauma-informed knowledge, leadership and methodologies. CSTS addresses a wide scope of trauma exposure and conducts research, education and consultation to extend knowledge of the psychiatric consequences of war, deployment, trauma, disaster and terrorism.

**Selected Achievements:**

- **Generated Knowledge on Trauma and Family.** CSTS mobilized existing resources to support its ongoing Child and Family Program (which studies the effects of trauma on families and children) and its ongoing Family Violence and Trauma Project (which addresses the prevalence of spousal abuse and child maltreatment in the Army).
- **Conducted Neuroscience Research.** CSTS scientists discovered two new critical paths in the neurobiology of PTSD, which may lead to new treatments. These discoveries represent collaborations with leading academic and research institutions including Yale University and the National Center for PTSD. Working as the Traumatic Stress Brain Study Group, the collaborators have access to the world’s only Brain Bank, which collects post-mortem brain tissue of PTSD patients.
- **Administered Clinical Neuroscience Education.** In April 2008, CSTS hosted the Third Annual Conference on the Neurobiology of Amygdala and Stress, which focused on basic neuroscience and translational research.
- **Conducted Military Psychiatry Research.** CSTS examined the molecular mechanisms underlying disorders like PTSD and translated findings to inform clinical and therapeutic interventions for diagnosis and treatment. For example, a major collaboration with the University of Michigan explored the epidemiology and the trajectory of PTSD, deployment stress, risk behaviors and health care utilization in National Guard and Reserve.

- **Administered Military Psychiatry Education.** CSTS trained providers in the MHS, including doctors, nurses, psychologists, military leaders, civilian providers and family outreach professionals. This education focused on preventing, mitigating and responding to the negative consequences of war, deployment and combat injury.
- **Provided Military Psychiatry Consultation.** CSTS provided real-time consultation to the MHS and its leadership, as well as to federal agencies, state agencies, industry and academic institutions regarding military PH and TBI issues.
- **Conducted Disaster Psychiatry Research.** CSTS led an innovative public health study involving longitudinal research to understand the vulnerability and resilience of public health responders and their work in the hurricanes of 2004 and 2005.
- **Disseminated Knowledge in Several Media Formats.** In 2007 and 2008 alone, CSTS scientists published more than 50 articles in various journals and books. In addition, CSTS produced educational materials such as the Joining Forces Joining Families newsletter, CSTS Web site, electronic fact sheets and a leadership document resulting from the Workgroup on Intervention with Combat Injured Families.
- **Launched Groundbreaking Study.** In July 2009, CSTS announced that Director Robert J. Ursano, M.D., would lead an interdisciplinary team of four research institutions to carry out the largest study of suicide and PH among military personnel ever undertaken. The study is being conducted under the guidance of the National Institute of Mental Health, with \$50 million in funding from the Army. This study has since been expanded to include the Marine Corps and to consider PH and resilience as outcomes, in addition to suicide.
- **Continued “Courage to Care” Series.** The “Courage to Care” series was first created and distributed in the summer of 2004, and CSTS has continued the initiative since becoming a DCoE component center. The primary aim of the series of useful handouts is to address PH issues, such as managing stress, for the military family. These documents are widely distributed and used throughout DoD and beyond.

“The military now has more thorough reporting mechanisms, requiring that anyone affected by a blast or blunt trauma in-theater go through an evaluation and screening. We have a single TBI registry and a single point of responsibility — the Defense and Veterans Brain Injury Center — to consolidate all TBI-related incidents and information.”

— Secretary of Defense Dr. Robert M. Gates, June 2008



**Defense and Veterans Brain Injury Center (DVBIC)**

DVBIC provides state-of-the-art clinical care, innovative research initiatives and professional education programs for TBI by collaborating with military, VA and civilian health

partners, local communities, families and individuals affected by TBI. The center brings together a comprehensive network of 19 sites throughout DoD and VA (including two civilian sites) and conducts a robust research program providing expertise to DoD on TBI issues.

**Selected Achievements:**

- **Offered Provider Education.** DVBIC has trained more than 2,300 DoD providers in TBI management to date, in large conference format and has facilitated provider education at local military treatment facilities.
- **Conducted Leading-Edge Research.** DVBIC pioneered the first randomized controlled study of rehabilitation therapies and the first Institutional Review Board-approved prospective study in a combat zone.
- **Facilitated In-Theater TBI Care.** DVBIC established an e-mail address, tbi.consult@us.army.mil, through which all deployed health care providers can obtain a consultation from Army Medical Department, VA and certified community TBI specialists. This consultation service was designed for use by

deployed health care providers and responses are provided within eight hours.

- **Produced In-Theater Tools.** DVBIC developed the Military Acute Concussion Evaluation, an officially adopted in-theater screening tool, as well as in-theater clinical practice guidelines for field management of severe injuries and management of mTBI and concussions.
- **Provided Program Oversight.** DVBIC managed the DoD pre-deployment cognitive testing program, a congressionally mandated 15-year longitudinal study of TBI incurred during the wars in Iraq and Afghanistan, TBI surveillance initiatives and DoD’s TBI Registry, as well as a congressionally mandated Family Caregiver Curriculum program.
- **Contributed Valuable Knowledge.** DVBIC neuroscientists and researchers continuously help to establish clinical standards and guidelines for care of service members and veterans with TBI.
- **Established Care Coordination Program.** The Regional Care Coordination Program serves to identify, track and provide follow-up support and services to active duty service members and veterans from Operation Iraqi Freedom and Operation Enduring Freedom who are diagnosed with a TBI or who were suspected to have sustained a TBI and are later diagnosed as such. The Regional Care Coordinators provide support, education and connection to TBI-specific resources within DoD, VA and civilian health care systems to maximize positive outcomes and mitigate negative impact on the service member and family.

**July 2009**  
DCoE hosts Driving Assessments After TBI Conference

**August 2009**  
DVBIC launches new TBI Web site for service members, veterans, family members and providers

**August 2009**  
DVBIC begins remote care neuropsychological evaluation program

**September 2009**  
First DoDSER report is compiled (p. 17)

**September 2009**  
“Best in Class” Interactive Media Award for Sesame Street Family Connections

**September 2009**  
DHCC initiates trial of Stepped Treatment Enhancements to PTSD Services Using Primary Care (p. 24)

**September 2009**  
DVBIC hosts Third Annual TBI Military Training Conference

**October 2009**  
T2 hosts collaborative summit on Telehealth Integration Plan

- **Delivered Quantifiable Results.** By September 2009, DVBIC had treated 11,553 patients, presented 79 manuscripts, distributed 146,852 educational tools and analyzed 925 survey reports.



**Deployment Health Clinical Center (DHCC)**  
DHCC’s mission is to improve deployment-related health care by providing assistance and advocacy for military personnel and families

with post-deployment health concerns through specialized clinical services, education and research. At the same time, DHCC serves as a catalyst and resource center for the continuous improvement of deployment health care across the MHS. DHCC provides referral care, clinical consultation, primary care improvement programs, research and other services aimed at ensuring the highest quality deployment-related care.

**Selected Achievements:**

- **Deployed RESPECT-Mil Care Model.** Deployed in early 2007, Re-Engineering Systems of Primary Care Treatment in the Military (RESPECT-Mil) is a collaborative care model that enables primary care providers to screen patients for PTSD and depression and treat appropriately when indicated. By September 2009, DHCC incorporated RESPECT-Mil screening into nearly 350,000 primary care visits in Army Medical Treatment Facilities, identifying 2,528 soldiers with suicidal ideation and providing them with appropriate care and follow-up.
- **Launched STEPS-UP Trial.** In September 2009, the DoD Deployment-Related Medical Research Program awarded DHCC, in partnership with RAND and RTI International, \$15 million to conduct Stepped Treatment Enhancements to PTSD

Services Using Primary Care (STEPS-UP), a five-year, six-site randomized controlled trial of an enhanced RESPECT-Mil treatment protocol that involves centralized care management and preference-based stepped care.

- **Offered Two Specialized Care Programs.** DHCC offers two intensive, outpatient, integrative specialized care programs: Track I for deployment-related idiopathic symptoms and Track II for PTSD and re-integration (which was hailed as “one of the country’s best PTSD programs” by The Washington Post). These highly effective programs focus on a therapeutic group process and evidence-based treatments in each three-week class of eight service members and emphasize strength-based resiliency to enable service members to manage their symptoms.
- **Initiated Recruitment for DESTRESS-PC Study.** DHCC’s innovative DESTRESS-PC study (which stands for Delivery of Self-Training and Education for Stressful Situations – Primary Care Intervention) is evaluating the efficacy of empirically valid cognitive behavioral self-management strategies delivered through a secure Web site. By November 2009, the DESTRESS-PC Study had recruited more than one-third of its target number of participants.
- **Conducted Research to Improve Health Services.** DHCC maintains an ongoing health services research program with seven DoD- and NIH-funded protocols. This research produced professional presentations, peer-reviewed publications and two new protocols initiated this year.
- **Sponsored Deployment Health Care Track at Force Health Protection Conference.** In August 2009, DHCC offered three full-day workshops and 50 individual presentations at the Albuquerque, N.M., conference to advance the cause of deployment-related care. The theme of the track was “The Theater of War” and included a dramatic reading of two plays by Sophocles detailing ancient warriors’ experiences of combat stress.

- **Produced Online Educational Resources.** DHCC offers comprehensive deployment health clinical information and patient education material in a multimedia format on its Web site, www.PDHealth.mil. Yielding an average of 24,000 page views per day, the site provides information on deployment-related health conditions and concerns, post-deployment clinical practice guidelines, provider/patient education material, deployment-related health research and relevant news articles.



**National Center for Telehealth & Technology (T2)**

T2 was established as a DCoE component center in 2007. Its central focus is to identify and advance emerging telehealth technologies within DoD and to ensure their integration in a manner that delivers access to optimal care. The center trains and equips providers with best practices for the treatment and prevention of PH and TBI problems using state-of-the-art technology. It also serves as the central coordinating agency for DoD research, development and implementation of technologies for providing enhanced diagnostic, treatment and rehabilitative services.

**Selected Achievements:**

- **Launched *afterdeployment.org*.** This interactive Web site presents self-care tools that target common post-deployment issues and provides service members with self-assessments, video-based testimonials and narrator-guided workshops. Reaching across the spectrum of post-deployment conditions, *afterdeployment.org* increases access to PH and TBI resources for military personnel and families. To increase visibility, T2 collaborated with the Armed Forces Network to produce a series of public service announcements promoting *afterdeployment.org* to warriors in 177 countries.
- **Improved Telehealth Services.** T2 is leading efforts to standardize DoD telehealth services for PH and TBI by integrating and disseminating best practices from existing DoD, VA and other federal and civilian telehealth programs to ensure that all warriors and their family members receive state-of-the-art care regardless of geographic location or physical mobility. T2 uses multiple technologies and coordinates with federal and non-federal agencies to create a national network of systems.

- **Explored New Technologies.** Growing research supports using innovative technologies such as virtual reality to improve education, resilience, assessment and treatment tools. T2 conducted several clinical training workshops for DoD and VA providers on Virtual Reality Exposure Therapy, a form of Prolonged Exposure therapy for PTSD. The center also conducted training for the Air Force Telemental Health Advisory Group on behavioral health technology and simulation applications. In addition, T2 began a randomized, controlled study comparing Virtual Reality Exposure Therapy to traditional Prolonged Exposure therapy for the treatment of PTSD in warriors. Pilot projects were also developed using other innovative applications including the virtual world, “Second Life” and home gaming systems to support state-of-the art treatment and support for those with PH challenges.
- **Created Automated Tools and Outcome Measures.** T2 maintained and enhanced the Automated Behavioral Health Clinic, which is pilot-tested to standardize measures with established reliability and to gather clinical and other information on PTSD, depression, anxiety, panic, anger and substance abuse from service members. Information about patients’ medical, personal, military and family history is also collected, and all data is integrated into a standardized electronic format that enhances accessibility and care. The future of the Automated Behavioral Health Clinic is enterprise deployment.

**National Intrepid Center of Excellence (NICoE)**

NICoE is the forthcoming clinical arm of DCoE, which will use an innovative, holistic approach to refer, assess, diagnose and treat those with complicated mTBI and PH disorders that have been resistant to treatment. Led by a skilled interdisciplinary team, NICoE is designed to become a global leader in generating, improving and harnessing the latest advances in science, therapy, telehealth, education, research and technology, while also providing compassionate family-centered care for service members and their loved ones throughout the recovery and community reintegration process.

**Selected Achievements:**

- **Completed Initial Facility Design and Strategy.** In December 2008, NICoE completed a construction plan for its state-of-the-art 72,000-square-foot facility (right) on the National Naval Medical Center campus in Bethesda, Md. The center is scheduled to open in summer 2010. Additionally,

“ I didn’t know if I would still be able to do my job and you helped me realize that I could. ”  
— Soldier enrolled in RESPECT-Mil

**October 2009**  
DCoE releases Cognitive Rehabilitation After Mild TBI Clinical Practice Guideline

**November 2009**  
DCoE hosts second annual Warrior Resilience Conference

**November 2009**  
TBI Family Caregiver Curriculum approved by the Defense Health Board

**2010 and beyond:**  
the journey continues...



“Our nation is truly blessed that so many talented and patriotic young people have stepped forward to serve. They deserve the very best facilities and care to recuperate from their injuries and ample assistance to navigate the next step in their lives, and that is what we intend to give them. Apart from the war itself, this department and I have no higher priority.”

— Secretary of Defense Dr. Robert M. Gates at the June 2008 NICoE groundbreaking ceremony



a comprehensive initial staffing plan, equipment list and concept of operations have also been completed.

- **Broke Ground for Flagship NICoE Facility.** Physical construction of the Bethesda facility began in June 2008 with a groundbreaking ceremony attended by Secretary Gates. The facility's physical location is especially advantageous, as it provides immediate access to USU, NIH and the National Library of Medicine, and is conveniently located near public transportation.
- **Developed Key Partnerships.** NICoE has developed actionable and substantial relationships with government agencies within DoD, VA, NIH, USU, private and academic institutions, as well as with philanthropic organizations like the Intrepid Fallen Heroes Fund and the Fisher House

Foundation. The latter is particularly unique in that a specially designed Fisher House will provide a living environment of hope, inspiration and community for warriors and their families during treatment at NICoE.

- **Hired Specially Trained Personnel.** To provide warriors with the best possible care, NICoE has undertaken a staffing plan that will result in the hiring of approximately 100 professionals specializing in the holistic and interdisciplinary care and treatment of service members and families that live with the effects of PH and mTBI conditions. NICoE's goal is to staff to initial operating capability by the time the facility opens in summer 2010. By June 2011, NICoE's goal is to establish full operating capability and be staffed at 90 percent of its specially qualified interdisciplinary healthcare team.

## ★ Research Strategy ★





## RESEARCH FUNDING

DCoE’s research mission is to coordinate innovative, evidence-based PH and TBI investments across DoD and other government agencies to meet both immediate and long-term needs associated with prevention, diagnosis, treatment, rehabilitation and outreach for warriors and their families. With that specific orientation, DCoE’s research program has already begun to produce three key results:

1. Leveraging unprecedented collaboration of evolving science to benefit service members.
2. Facilitating the translation of research into practice.
3. Minimizing the redundancy of PH and TBI research efforts.

DCoE is not itself a funding agency, but plays a leadership role in developing research investment strategies to agencies that are, such as Congressionally Directed Medical Research Programs and the Army’s Telemedicine and Advanced Technology Research Center. Rather than acting as the sole management source for all PH and TBI research, DCoE pairs the most innovative PH and TBI efforts with most talented subject matter experts in order to provide active program management and to more effectively synthesize and disseminate knowledge that will significantly benefit service members on the ground.

To more prudently guide the investment of research funds, DCoE has also participated and provided leadership related to PH and TBI issues for the Joint Technology Coordinating Groups, a collaborative effort across DoD and other major federal government agencies to coordinate PH and TBI investments and conduct programmatic reviews of research proposals.

- Specifically, DCoE research facilitation and coordination activities have yielded the following results:
- FY2007: Monitoring progress of research funded from FY2007 Supplemental to identify promising breakthroughs and inform future investment strategies.
  - FY2008: Funded \$50 million in pioneering PH and TBI research, including \$5 million in complementary and alternative medicine (CAM). This effort utilized FY2007 supplemental research funds.
  - FY2009: Developed investment strategy and review process for Congressional Special Interest and Warfighter Supplemental investment of \$90.4 million and \$75 million respectively and chaired review process.

- FY2009: Initiated three Small Business Innovation Research (SBIR) programs aimed at using computer technologies for education, outreach and rehabilitation.
- FY2009: Co-sponsored workshop to develop Common Data Elements for PH and TBI research with three federal partners: NIH, VA and the National Institute on Disability and Rehabilitation Research (NIDRR).
- FY2009: Developed standardized program evaluation framework that is scalable to program size, scope and lifecycle stage.
- FY2009: Supported by DCoE staff, the DCoE Director chaired the Integration Panel to review research proposals overseeing supplemental funding managed by Congressionally Directed Medical Research Programs.
- FY2010: Developing PH and TBI investment strategy for the Defense Health Program’s Research Development Test and Evaluation initiative.
- ONGOING: Sponsoring HBO2 for TBI Clinical Trial.
- ONGOING: Serving as PH and TBI lead on four Expanded Joint Technology Coordinating Groups (JTCG-1: Advanced Technology; JTCG-5: Military Operational Medicine; JTCG-6: Combat Casualty Care; and JTCG-8: Clinical and Rehabilitative Medicine).
- ONGOING: Partnerships with other DoD entities, NIH, VA and NIDRR to explore existing IT platforms for federal interagency research project management and outcomes dissemination.

### Research Highlights

DCoE is working on multiple fronts to advance research for PH and TBI in this nation. Research is essential to meeting both immediate and long-term goals for the advancement of scientific knowledge; therefore, DCoE brings together the nation’s top experts from across DoD, VA, federal and non-federal agencies, academic institutions and the health care community to advance

our understanding of the human brain as well as the impact of continued stress and trauma.

The section below highlights several key research efforts currently underway by DCoE.

- **Blast Mitigation Studies:** To better understand TBI causes, DCoE participated in blast mitigation studies with the United States Army Medical Research and Materiel Command exploring the effects of blast and blunt injuries on the brain. DCoE also partnered with external groups, including the National Football League, Massachusetts Institute of Technology and Virginia Tech to further research and study the effects of blunt brain injuries.
- **Trauma Spectrum Disorders Conference:** DCoE partnered with VA and NIH to hold an inaugural two-day collaborative scientific event to examine the best existing science on trauma spectrum disorders in October 2008. Titled “Trauma Spectrum Disorders: The Role of Gender, Race and Other Socioeconomic Factors,” the event focused on the challenges of closing knowledge gaps and improving the identification of gender and race factors in traumatic stress and TBI.
- **The Holistic Approach:** CAM projects are an essential piece in advancing a holistic approach to treating PH and TBI concerns. In FY 2007, DCoE supported \$5 million in CAM projects spanning the use of acupuncture, service dogs, yoga, mindfulness and virtual reality in PH and TBI.
- **Collaborate on with RAND on Suicide Prevention and Resilience:** DCoE established a partnership with the RAND National Defense Research Institute to conduct four studies vital to advancing PH and TBI knowledge in the military. The first study DCoE is managing will examine DoD suicide prevention programs and determine which are most effective, what metrics they use and how they can be implemented

- across the armed services. The second will thoroughly review the existing literature on psychological resilience to inform current efforts to implement resilience programs within the DoD. The third will develop a compendium of all existing DoD-sponsored PH and TBI programs, then will evaluate 20 leading programs using a program evaluation system that will be made publically available to allow other programs to evaluate themselves. The fourth is a three-year effort to examine the impact of deployment on families with the goal of identifying the most important areas to focus interventions to improve the health and wellness of families.
- **Small Business Innovation Research (SBIR):** To harness the innovative talents of small technology companies, DCoE leverages DoD’s SBIR program. DCoE has initiated three cutting-edge research initiatives in this area, specifically aimed at developing cognitive and motor therapy tools using videogame technology, game-based PH outreach tools and support tools for children of military families.
  - **Common Data Elements Development:** It is necessary to determine common metrics and data elements across research studies in PH and TBI to develop a consistent and logical research strategy. DCoE joined forces with VA, the National Institute on Disability and Rehabilitation Research and the National Institute of Neurological Disorders and Stroke to co-sponsor a workshop in 2009 to establish these research standards. The conference gathered top leaders from around the world to develop recommendations for standardizing definitions, variable sets, assessment tools and procedures in PH and TBI research. In all, 137 national and international experts participated in the conference, including representatives of each of the four co-sponsoring agencies, 21 U.S. and international universities, 19 DoD entities, nine NIH-affiliated institutes, the Centers for Disease Control and Prevention and other key stakeholders.



The Increasing Role of DCoE in Research Coordination

FY2007	
Supplemental Appropriation*	\$50,000,000
PH and TBI Research	\$45,000,000
CAM	\$5,000,000
FY2009	
Overseas Contingency Operations Supplemental	\$75,000,000
Congressional Special Interest	\$90,400,000
SBIR	\$800,000
TOTAL, FY2007-FY2009	\$216,200,000

\*RDT&E appropriations are available for obligation for two years; proposals for FY2007 supplemental funds and CAM funds were reviewed in CY2008.

For a list of studies that DCoE has directed funding for, please see the following chart.

STUDIES FUNDED

Principal Investigator	Performing Organization	Proposal Title	Award Mechanism
Gordon, James	The Center for Mind-Body Medicine	A Randomized Controlled Study of Mind-Body Skills Groups for Treatment of War-Zone Stress in Military and Veteran Populations	CAM-Investigator-Initiated Research Award
Jonas, Wayne	Samueli Institute	Acupuncture for the Treatment of Trauma-Induced Spectrum Disorder: A Three-Armed Randomized Pilot Study	CAM-Investigator-Initiated Research Award
Liberzon, Israel	University of Michigan	Mindfulness and Self-Compassion Meditation for Combat Post-Traumatic Stress Disorder: Randomized Controlled Trial and Mechanistic Study	CAM-Investigator-Initiated Research Award
McLay, Robert	Naval Medical Center San Diego	Importance of Virtual Reality in the Treatment of PTSD: Comparison of Virtual Reality to a Controlled Stimulus	CAM-Investigator-Initiated Research Award
Rosenthal, Mark Z.	Duke University Medical Center	Virtual Reality and Cellular Phones as a Complementary Intervention for Veterans with PTSD and Substance Use Disorders	CAM-Investigator-Initiated Research Award
Khalsa, Sat Bir	Brigham and Women's Hospital	Evaluation of a Yoga Intervention for PTSD	CAM-Seedling
Love, Craig	Westat, Inc	The Use of Psychiatric Service Dogs in the Treatment of Veterans with PTSD	CAM-Seedling
Malphurs, Julie	Miami VA Healthcare System	The Impact of Meditation on Veterans with Post-Traumatic Stress Disorder (PTSD)	CAM-Seedling
Powch, Irene	Oregon Health & Science University	Acupuncture for Combat-Related Post-Traumatic Stress Disorder	CAM-Seedling
Zollman, Felise	Rehabilitation Institute Research Corporation	Acupuncture as a Novel Technique for Treating Insomnia in the Outpatient Traumatic Brain Injury population: A Randomized Controlled Trial	CAM-Seedling
Southwick, Steven	Yale University	Mental Health and Resilience: Soldiers' Perceptions about Psychotherapy, Medication, and Barriers to Care in the U.S. Military	Intramural PTSD Investigator-Initiated Research Award
Cozza, Stephen	Uniformed Services University of the Health Sciences	Deployment Family Stress: Child Neglect and Maltreatment in U.S. Army Families	Intramural PTSD Investigator-Initiated Research Award

Principal Investigator	Performing Organization	Proposal Title	Award Mechanism
Fullerton, Carol	Uniformed Services University of the Health Sciences	Mourtuary Affairs Soldiers: Early Intervention and Altering Barriers to Care for Traumatic Stress and PTSD	Intramural PTSD Investigator-Initiated Research Award
Liberzon, Israel	University of Michigan	Medial Prefrontal Cortex and HPA Axis Roles in Generation of PTSD-Like Symptoms in SPS Model	Intramural PTSD Investigator-Initiated Research Award
Taft, Casey	VA Boston Healthcare System	PTSD-Focused Cognitive Behavioral Therapy for Partner Violent OIF/OEF Veterans	Intramural PTSD Investigator-Initiated Research Award
Tortella, Frank	Walter Reed Army Institute of Research	Stem Cell Therapeutics for Military Relevant Brain Injury Using Amnion-Derived Multipoten Profenitor (AMP) Cells	Intramural TBI Advanced Technology-Therapeutic Development Award
Gullapalli, Rao	University of Maryland, Baltimore	Investigation of Prognostic Ability of Novel Imagine Markers for Traumatic Brain Injury (TBI)	Intramural TBI Investigator-Initiated Research Award
VandeVord, Pamela	VA Medical Center, Detroit	Measuring Intracranial Pressure and Correlation with Severity of Blast Traumatic Brain Injury	Intramural TBI Investigator-Initiated Research Award
Walker, William	McGuire Research Institute, Inc.	Epidemiological Study of Mild Traumatic Brain Injury Dequelae Caused by Blast Exposure During Operations Iraqi Freedom and Enduring Freedom	Intramural TBI Investigator-Initiated Research Award
Jha, Amishi	University of Pennsylvania	Building Neurocognitive resilience with Attention Training In a Military Cohort	Investigator Initiated Research Award - Unsolicited
Agoston, Denes	Uniformed Services University of the Health Sciences	The Role of Early Stress on the Development of PTSD After Blast Injury	PTSD Concept Award
Alvarez, Jennifer	VA Palo Alto Health Care System	An Evaluation of Cognitive Processing Therapy to Treat Veterans in a PTSD Residential Rehabilitation Program	PTSD Concept Award
Beck, Kevin	Veterans Bio-Medical Research Institute, Inc.	Opiate Masking of Stress-Induced Hypervigilance: The Cause of Delayed Symptom Presentation in PTSD	PTSD Concept Award
Bergson, Clare	Medical College of Georgia Research Institute, Inc.	Genetic Screen for PTSD-Prone Soldiers	PTSD Concept Award
Boyden, Edward	Massachusetts Institute of Technology	High-Throughput Screening of Therapeutic Neural Stimulation Targets: Toward Principals of Preventing and Treating Post-Traumatic Stress Disorder	PTSD Concept Award

Principal Investigator	Performing Organization	Proposal Title	Award Mechanism
Cox, Brian	Uniformed Services University of the Health Sciences	Neurobiologic Evaluation of Novel Targets for Therapeutic Intervention in PTSD	PTSD Concept Award
Duffy, Farifteh	American Psychiatric Institute for Research and Education	A Comprehensive Approach in Dissemination of Evidence-Based Care for PTSD	PTSD Concept Award
Dutton, Mary Ann	Georgetown University	Day-to-Day Mindfulness Skills for Improving Veterans' Quality of Life and Wellness in Health Care Mental Health Settings	PTSD Concept Award
Kizakevich, Paul	Research Triangle Institute (RTI)	Personal Monitoring for Ambulatory PTSD Assessment	PTSD Concept Award
O'Rourke, Kathleen	University of South Florida	Evaluation PTSD on Reproductive Outcomes: Women Deployed in Iraq and Afghanistan	PTSD Concept Award
Schrader-Kreik, Laura	Tulane University	Hormonal Regulation of Extinction: Implications for Gender Differences in the Mechanism of PTSD	PTSD Concept Award
Slone, Laurie	Dartmouth College	Military, Family, and Community Networks Helping with Reintegration	PTSD Concept Award
Zayfert, Claudia	Dartmouth College	Computer-Guided Prolonged Exposure Therapy for PTSD	PTSD Concept Award
Galea, Sandro	University of Michigan	PTSD Trajectory, Comorbidity, and Utilization, of Mental Health Services among Reserves	PTSD Investigator-Initiated Research-Award
Germain, Anne	University of Pittsburgh School of Medicine	Neurobiology of Sleep and Sleep Treatments in PTSD(NOS-STIP)	PTSD Investigator-Initiated Research-Award
Aikins, Deane	Yale University	Using Propranolol to Block Memory Reconsolidation in Female Veterans with PTSD	PTSD New Investigator Award
Newton, Phillip	Ernest Gallo Clinic and Research Center	Protein Kinase C-Epsilon in the Amygdala-Prefrontal Cortex Circuit Regulates the Extinction or Conditioned Fear	PTSD New Investigator Award
Norrholm, Seth	Emory University	Conditioned Fear Extinction and Generalization in Post-Traumatic Stress Disorder	PTSD New Investigator Award
Simmons, Alan	Veterans Medical Research Foundation of San Diego	Using fMRI to Measure Brain Response to Exposure-Based Psychotherapy in Individuals with Combat-Related PTSD	PTSD New Investigator Award
Su, Yan	George Washington University	Identification of Gene Expression Patterns in Brain Tissues and Peripheral White Blood Cells of Rat Model of Post-Traumatic Stress Disorder (PTSD)	PTSD New Investigator Award



Principal Investigator	Performing Organization	Proposal Title	Award Mechanism
Curra, Francesco	University of Washington	Comprehensive 3-D Model of Shock Wave-Brain Interactions in Blast-Induced Traumatic Brain	TBI Concept Award
Levy, Charles	North Florida/South Georgia Veterans Health System	Design of Effective Therapeutic Interventions for Mild TBI/PTSD Using Interactive Virtual World Environments	TBI Concept Award
Rusiecki, Jennifer	Uniformed Services University of the Health Sciences	Epigenetic Patterns of TBI: DNA Methylation in Serum of OIF/OEF Service Members	TBI Concept Award
Zhang, Liying	Wayne State University	Computational Modeling of Casual Mechanisms of Blast Wave-Induced Traumatic Brain Injury: A Potential Tool for Injury Prevention	TBI Concept Award
Beresford, Thomas	Denver Research Institute	A Double Blind Trial of Divalproex Sodium for Affective Liability and Alcohol Use Following Traumatic Brain Injury	TBI Investigator-Initiated Research Award
Valadka, Alex	University of Texas, Health Science Center at Houston	Mission Connect Mild TBI Translational Research Consortium	TBI Multidisciplinary Research Consortium Award
Twamley, Elizabeth	University of California, San Diego	Improving Work Outcomes for Veterans with Traumatic Brian Injury	TBI New Investigator Award
Walker, Mark	Case Western Reserve University	Disequilibrium after Traumatic Brain Injury: Vestibular Mechanisms	TBI New investigator Award

# ★Future Initiatives★





DCoE and its six component centers are dedicated to ensuring that the sacrifices of our intrepid warriors are not in vain. The wars in Afghanistan and Iraq are revolutionizing our understanding of trauma and the human brain.

DCoE continues to incorporate the valuable insights gained throughout the first two years of its critically important journey. Moreover, DCoE will apply the advancements resulting from these insights to its future work to diligently assess standards of care throughout DoD and to innovate new ways to improve that care.

Collaboration, transparency and proactive partnerships are absolutely necessary to continue to achieve these goals, and so DCoE will continue to bring together a global network for advancing resilience, recovery and reintegration in the brave men and women who defend our nation. Below are selected initiatives particularly germane to the next step in DCoE's journey.

**Studying Innovative Interventions: Initiate Research Study of Hyperbaric Oxygen (HB02) for TBI**

DCoE will initiate its planned HB02 study at military installations including Fort Carson, Colo., Camp Pendleton, Calif., Fort Hood, Texas, Brooks City, Texas, and Camp Lejeune, N.C. The study will seek to determine whether HB02 therapy improves the functioning of combat injured warriors with persistent signs and symptoms of mild and moderate TBI. Based on the results of this study, recommendations will be made as to whether HB02 should be implemented more widely across the MHS. Future steps to advance the science in this area will also be determined. The multi-site study has submitted an Investigational New Drug registration to the Food and Drug Administration and is moving toward execution as rapidly as is feasible while maintaining ethical guidelines and scientific integrity.

**Reaching Care to More Warriors: Deploy SimCoach Tool**

DCoE is developing a revolutionary next-generation outreach solution called SimCoach. By leveraging artificial intelligence, voice recognition, videogame and avatar interaction technologies, SimCoach will provide technologically savvy warriors with private, virtual access to psychological resources

and will seek to reduce the stigma associated with seeking care. This cutting-edge virtual tool will allow military personnel and their families to interact with top PH and TBI experts and peers in an anonymous, self-paced, online environment that can be accessed from anywhere with Internet access.

Through its teaming with the University of Southern California's Institute for Creative Technologies and the Army Research, Development and Engineering Command, DCoE will continue to merge truly pioneering technologies as SimCoach nears completion.

The development process will update and expand the SimCoach system at regular intervals throughout 2010 to address technological challenges effectively. DCoE will employ an evidence-based validation strategy, as it views SimCoach as a first step in developing even more innovative applications in the future.

**Provide the Leading Policy and Procedure Recommendations: Implement Post-TBI Driving Evaluations**

To assist service members coping with symptoms of TBI, DCoE will champion a framework of clinical guidelines for evaluating post-TBI driving abilities. Following a severe TBI, service members may experience lingering motor weakness, problems thinking and behavioral issues, and in some cases may also have seizure disorders. Establishing and implementing consistent driving evaluations will allow DoD to determine if affected service members possess the cognitive, physical and behavioral wherewithal to safely operate a motor vehicle.

Because there is currently no approved standard operating procedure for approaching this topic, DCoE is taking the lead on developing it. DCoE will base its future work on knowledge resulting from a July 2009 conference that brought together approximately 30 subject matter experts from the military services, VA and academia.

**Continuing Education: Develop Online Training for Treating TBI**

DCoE regularly leverages technology to enhance care for warriors who have experienced TBIs while serving our nation. By providing services via online mechanisms, DCoE is able to reach a broader audience, and in turn disseminate the leading research and practices to clinicians that traditionally may not have access. To that end, DCoE will produce online training tools for clinicians that incorporate existing CPGs into newly developed TBI case studies.

In the near future, these online case studies will provide real-life applications for using the most up-to-date TBI CPGs and Clinical Practice Tools. These online resources will be available to clinicians around the globe, thus giving hands-on tools to an extensive audience including underserved communities. In addition, a built-in survey functionality at the conclusion of each TBI case study will gather feedback that will allow DCoE to assess and refine the tool's effectiveness.

**Innovative Methods for Addressing PH and TBI: Expand Theater of War Initiative**

In keeping with its strategy of exploring innovative programs, DCoE will extend its "Theater of War" initiative, which presents dramatic readings from Sophocles' plays about ancient Greek warriors and their psychological struggles after combat. The "Theater of War" experience helps to demystify psychological injury by placing it into the larger context of ancient warrior culture. Moreover, it uses a community immersion approach to healing and thereby fosters open dialogue among service members in the audience about the physical and psychological toll of combat.

Through this program, DCoE continues to sponsor performances at military bases and other locations throughout the coming year. Each session features acclaimed performers (past participants have included Oscar-winning and nominated actors) and is

accompanied by a candid town-hall style discussion about personal experiences with post-deployment readjustment.

**Overcome Stigma: Extend Real Warriors Campaign**

DCoE continues to sponsor the Real Warriors Campaign to dispel the stigma that too often prevents warriors from seeking care for PH and TBI concerns. Going forward, the campaign will enhance its focus on the stigma experienced by family members who have the strength to encourage loved ones to seek treatment. Real Warriors will continue to leverage online materials, social networking, quality partnerships, an active outreach strategy and significant media coverage to empower military families to support warriors in need, even when stigma seems to be a significant barrier.

**Evaluating Effectiveness: Resilience Pilots Project**

Resilience is a key focus of DCoE's efforts to support and improve the PH of service members and families. There are many programs in DoD and the civilian sector that are designed to build resilience. Although all of these are well intentioned, most have little to no data showing whether they lead to improved outcomes. In addition, the large number of programs leads to a lack of consistency across services and installations. Thus, DCoE has undertaken a Resilience Pilots Project to test four or five large resilience programs that have evidence of effectiveness in civilian populations to determine if they could be helpful for service members and their families. The programs selected thus far are the Army's Comprehensive Soldier Fitness, Gallup's StrengthFinders 2.0, Human Performance Institute's Corporate Athlete and Magis Group's WAROPS. A fifth program is under consideration. DCoE has contracted with Booz Allen Hamilton to implement this project. The Resilience Pilots Project will pilot test each of these programs at one site in each service, measuring both short and long-term outcomes with the goal of identifying those which can be most effective, and then providing this information to military leaders.



GET INVOLVED WITH DCOE

Through its six component centers, DCoE disseminates actionable information about the rapidly evolving spectrum of PH and TBI care in myriad publications and presentations. Use the resources below to learn more about DCoE’s ongoing work and to work together on our journey of excellence and continuous improvement.

Component Center Web Sites



**Center for Deployment Psychology**  
[www.deploymentpsych.org](http://www.deploymentpsych.org)



**Center for the Study of Traumatic Stress**  
[www.centerforthestudyoftraumaticstress.org](http://www.centerforthestudyoftraumaticstress.org)



**Defense and Veterans Brain Injury Center**  
[www.dvbic.org](http://www.dvbic.org)



**Deployment Health Clinical Center**  
[www.pdhealth.mil](http://www.pdhealth.mil)



**National Center for Telehealth & Technology**  
[www.t2health.org](http://www.t2health.org)

**National Intrepid Center of Excellence**  
Web site launching soon

“DCoE in Action” Newsletter

Beginning in May 2008, DCoE published a series of regular newsletters titled “DCoE in Action,” which are distributed to approximately 3,300 key stakeholders in the military health community and serve to communicate best practices and encourage innovation in PH and TBI. To see past newsletters or join the distribution list, please visit [www.dcoe.health.mil/Newsletter.aspx](http://www.dcoe.health.mil/Newsletter.aspx).

DCoE Conferences

To find up-to-date information about DCoE’s conferences, visit <http://www.dcoe.health.mil/training.aspx>.

DCoE Outreach Center

To access 24/7 guidance on resources for PH and TBI, call 866-966-1020 or chat online at <http://www.dcoe.health.mil/24-7help.aspx>.



**DEFENSE CENTERS  
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& Traumatic Brain Injury

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1335 East West Highway  
9th Floor, Suite 640  
Silver Spring, MD 20910

Main Office 301-295-3257  
[www.dcoe.health.mil](http://www.dcoe.health.mil)